

**REMARKS**

Claims 72-75 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 72 and 73 are rejected under 35 U.S.C. § 102(b) as being anticipated by the references Boie (*Synthesis*), O'Donnell (*Tetrahed. Asymmetry*), Crisp (*Tetrahed. Lett.*) and Sames (*J. Org. Chem.*). Claims 72 and 73 are additionally rejected under 35 U.S.C. § 102(b) as being anticipated by compounds RN 161300-04-5 (Compound no. 17 disclosed in *Monatshefte fur Chemie*, vol. 125 (11), page 1160, 1994); RN 126385-60-2 (Compound no. 6d disclosed in *Tetrahedr. Lett.* Vol. 30(30) page 3964, 1989); and RN 31025-83-9 (Compound no. 32 disclosed in *J. Economic Entomology*, Vol. 63(6) page 1859, 1970) when R<sub>1</sub> and R<sub>2</sub> are either alkyl or phenyl groups in the instant compounds of claim 72. Claims 72-75 are rejected under 35 U.S.C. § 102(a) as being anticipated by compound RN 352311-16-1 (disclosed in *Organic Lett.* Vol. 3 (13) pages 2045-2048, 2001). Claims 72-75 stand rejected under 35 U.S.C. § 101 for lack of utility.

Applicants thank the Examiner for the interview conducted on November 30, 2005. In the interview, Applicants and the Examiner discussed the 35 U.S.C. § 101 and § 112 rejections. Applicants submitted documentation for the Examiner's consideration regarding § 101 and transitory chemical intermediates. The Examiner agreed that a traversal of the § 101 rejection would overcome the outstanding 35 U.S.C. § 102 rejections as well. No formal agreement was reached with respect to the § 112 rejection.

**Claims 72-75 and 35 U.S.C. § 112, Second Paragraph**

The rejection of claims 72-75 under 35 U.S.C. § 112, second paragraph is respectfully traversed.

Applicants have amended claim 72. Support for the present amendment can be found in paragraphs [0038], [0039], [0041], [0042], and [0043] as well as elsewhere throughout the specification. The present claim amendment is made in an effort to expedite allowance of the claims and should not be viewed as Applicants' agreement

with the position of the Office regarding the propriety of the § 112 rejection. In view of the present claim amendment, Applicants respectfully request that the rejection of claims 72-75 under § 112, second paragraph, be withdrawn.

Claims 72 and 73 and 35 U.S.C. § 102(b)

Claims 72 and 73 are rejected under 35 U.S.C. § 102(b) as being anticipated by Boie, O'Donnell, Crisp, and Sames in addition to several compounds located in Chemical Abstracts. Applicants respectfully traverse the present rejection.

In the rejection, the Office Action states that compound no. 10 in Boie anticipates the present claims when both  $R_1$  and  $R_2$  represent phenyl groups. Claims 72-75 are directed to a free radical intermediate comprising an  $sp^2$  hybridized radical carbon. Compound no. 10 in Boie is not a free radical as every atom in the compound exhibits paired electrons.

A free radical intermediate comprises an atom with an unpaired electron as illustrated by the  $sp^2$  hybridized carbon in the chemical structure of claim 72. The  $sp^2$  hybridized carbon in the *El* group of compound no. 10 has paired electrons and is not considered to be a free radical intermediate. The  $sp^2$  hybridized carbon of the *El* group displays a stable electronic configuration as three of its electrons reside in sigma bonding orbitals and the remaining electron resides in a pi bonding orbital. By having all valence electrons in bonding orbitals, the  $sp^2$  hybridized carbon of compound no. 10 is not a free radical. In failing to recite or disclose a free radical intermediate, Applicants respectfully assert that Boie does not anticipate claims 72 and 73 of the present application.

The Office Action additionally states that compounds disclosed in O'Donnell, Crisp, and Sames anticipate the free radical intermediate of claims 72 and 73. Applicants respectfully assert that the compounds disclosed in these references are not free radicals as they do not exhibit any atoms with unpaired electrons. For reasons consistent with those delineated in the discussion of the Boie reference, Applicants respectfully assert that the compounds disclosed in O'Donnell, Crisp, and Sames do not anticipate the free radical intermediate of claims 72 and 73.

Furthermore, the Office Action states that claims 72 and 73 are anticipated by compounds RN 161300-04-05, RN 126385-60-2, RN 31025-83-9 when  $R_1$  and  $R_2$  represent either alkyl or phenyl groups in the instant compounds. These compounds are not free radical intermediates as all the atoms in the compounds display paired electrons. For reasons consistent with those delineated in the discussion of the Boie reference, Applicants respectfully assert that claims 72 and 73 are not anticipated by the present compounds and respectfully request the Examiner to withdraw the rejection.

Claims 72-75 and 35 U.S.C. § 102(b)

Claims 72-75 are rejected under 35 U.S.C. § 102(a) as being anticipated by compound RN 352311-16-1 when both  $R_1$  and  $R_2$  represent methyl groups and  $n$  represents 0. Applicants respectfully traverse this rejection.

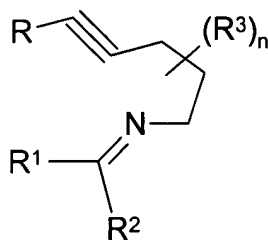
Compound RN 352311-16-1 is not considered to be a free radical intermediate as all the atoms in the compound display paired electrons. For reasons consistent with those discussed in the rejection of claims 72 and 73 under § 102(b), Applicants respectfully assert that claims 72-75 are not anticipated by compound RN 352311-16-1 and respectfully request that the Examiner withdraw the rejection.

Claims 72-75 and 35 U.S.C. § 101

The rejection of claim 72-75 under 35 U.S.C. § 101 is respectfully traversed. The specification provides a utility for the free radical intermediate of claims 72-75. In particular, the specification recites that the free radical intermediate is useful for preparation of various pyrrolidine compounds, such as derivatives of the amino acid proline.<sup>1</sup> In furtherance of this recited utility, the specification provides methods for preparing a free radical intermediate of claims 72-75. The specification discloses that a free radical of claims 72-75 can be prepared by contacting a compound of the formula

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<sup>1</sup> Specification, page 3, paragraph [0009].



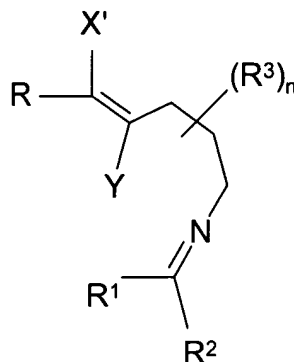
with a free radical initiator in the presence of a hydrogen atom donor.<sup>2</sup> The term “free radical initiator” is defined in paragraph [0007] as being any compound which is capable of facilitation of a free radical reaction via homolytic mechanism. Examples include azonitrile compounds such as 2, 2'-azobisisobutyronitrile (AIBN), peroxides, and the like.<sup>3</sup> Moreover, “a hydrogen atom donor” is defined in paragraph [0008] of the specification. Examples of suitable hydrogen donor compounds include organostannane hydrides, organosilyl silanes, organogermanium hydrides, 1,4-cyclohexadiene,  $\gamma$ -terpinene, thiols, selenol, and the like. Examples of organostannane hydrides include compounds of the Formula  $(X')_3\text{Sn-H}$ , wherein  $X'$  is an alkyl group, preferably a  $\text{C}_1\text{-C}_6$  alkyl group, aryl group, or a fluorous derivative thereof. Alternatively, such a compound can be generated *in situ*; for example, hexamethylditin can be photolyzed to provide the same tin radical as tri-n-butyl tin hydride plus a free radical initiator compound. Examples of alkylsilylsilanes include tris(trimethylsilyl)silane, triethylsilane, and the like.<sup>4</sup>

The specification additionally provides that a free radical intermediate of claims 72-75 can be prepared by contacting a compound of the formula

<sup>2</sup> Specification, page 4-5, paragraph [0010].

<sup>3</sup> Specification, page 3, paragraph [0008].

<sup>4</sup> Specification, page 3, paragraph [008].



with a free radical initiator in the presence of a hydrogen atom donor, wherein Y is a radical leaving group, and X' is a group selected from C<sub>1</sub> – C<sub>6</sub> alkyl, aryl, or a fluororous derivative thereof. Furthermore, Applicants respectfully assert that methods of preparing free radical intermediates are well known to one of ordinary skill in the art as free radical intermediates play important roles in polymer production and numerous organometallic processes.

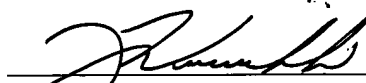
Additionally, Applicants respectfully assert that isolation of the free radical intermediate is not required in order for the present invention to be operable and demonstrate a utility. *See In re Breslow*, 616 F.2d 516, 205 USPQ 221 (CCPA 1980). In view of the foregoing arguments, Applicants respectfully assert that the present invention is compliant with § 101 and respectfully request that the Examiner withdraw the present rejection.

### CONCLUSION

For the foregoing reasons, an allowance of all the claims is respectfully solicited. The Examiner is respectfully invited to contact J. Clinton Wimbish at (336) 607-7399 to discuss any matter relating to this application.

Respectfully submitted,

Date: 12/8/05

  
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